

REMARKS

Claims 26-32 are pending in this application. By this Amendment, claims 26-30 and 32 are elected with traverse, and claims 26 and 28 are amended. Reconsideration and withdrawal of the rejections in view of the above amendments and the following remarks are respectfully requested.

Entry of the amended claims is proper under 37 C.F.R. §1.116 since the amendments: (1) place the application in condition for allowance (for the reasons discussed herein); (2) do not raise any new issues requiring further search and/or consideration (since the amendments amplify issues previously discussed throughout prosecution without incorporating additional subject matter); (3) satisfy a requirement of form asserted in the Office Action; and/or (4) place the application in better form for appeal (if necessary). Entry is thus requested.

I. Restriction

The Office Action indicates that the application contains a group of inventions not linked as to form a single general inventive concept. In particular, the Office Action identifies Group I as directed to claims 26-30 and 32 drawn to a pig for use in a tubular bore and method for cleaning a tubular bore, and identifies Group II directed to claim 31 drawn to a method of cleaning coiled tubing. The Office Action also indicates that claim 31 is withdrawn from consideration based on original presentation for prosecution on the merits. Applicant hereby provisionally elects Group I, directed to claims 26-30 and 32 with traverse.

It is respectfully submitted that the invention of Group I and the invention of Group II both depend from claim 26. Accordingly, Groups I and II depend from a single independent claim and define different embodiments of the same invention. Accordingly, to the extent that independent claim 26 is allowed, rejoinder and examination of the Group II claim are respectfully requested.

II. Claim Objection

The Office Action objects to claim 28 for not including the word "further." By this Amendment, Applicant has amended claim 28 to include the word "further," and the objection should be withdrawn.

III. Claim Rejection 35 U.S.C. §112

The Office Action rejects claims 26-30 and 32 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed.

Specifically, the Office Action objects to claim 26 at line 2 for allegedly being unclear as to what is meant by "generally cylindrical." By this Amendment, claim 26 is amended to delete the word "generally." Applicant further notes that Figure 1 of the application is an example of an embodiment of the subject matter set forth in claim 26 and clearly shows a cylindrical

elongate body as set forth in the claim. Accordingly, claim 26 clearly sets forth the subject matter which the Applicant regards as the invention, and the rejection should be withdrawn.

IV. Claim Rejection 35 U.S.C. §102(b)

The Office Action rejects claims 26, 29 and 32 under 35 U.S.C. §102(b) over U.S. Patent No. 5,797,993 to Woehleke (hereinafter "Woehleke"). This rejection is respectfully traversed.

Applicant respectfully submits that Woehleke shows in Figure 1 a pipeline pig 100 having an elongated cylindrical body 105. The elongated cylindrical body 105 is hollow and has a spring 165 therein. The spring 165 elastically couples the elongated cylindrical body 105 to a piston 135. Attached to a front end of the elongated cylindrical body 105 is a circular front plate 110 with a front plate seal 115 attached to its circumference. Also attached to the elongated cylindrical body 105, opposite of the front plate 110, is a circular rear plate 120 with a rear plate seal 125 attached to its circumference. Pivotably attached to the front plate 110 and the rear plate 120 are ribs 145 and 155, respectively, and pivotably attached to the front rib 145 and rear rib 155 are front struts 150 and rear struts 160, respectively. Front struts 150 are additionally pivotably attached to a collar 130, which slides front-to-back while surrounding the elongated cylindrical body 105. A piston end plate 140 is pivotably attached to the rear struts 160. See column 4, line 35 to column 6, line 10 of Woehleke.

In operation, the spring 165 of the pipeline pig 100 is compressed and the front ribs 145 and rear ribs 155 pivot to lie substantially parallel to a central axis of the elongated cylindrical

body 105. In this configuration, the pipeline pig 100 is inserted into a small diameter pipe attached to a large diameter pipe. The small diameter pipe has an inner diameter which substantially matches the outer diameter of the front plate 110 and rear plate 120. When so inserted, the pipeline pig 100 seals against the inner surface of the small diameter pipe.

After insertion into the small diameter pipe, fluid pressure is applied to the interior of the small diameter pipe to push the pipeline pig 100 through the small diameter pipe and into the large diameter pipe. When the pipeline pig 100 enters the large diameter pipe, the spring 165 extends and the front ribs 145 and rear ribs 155 deploy substantially perpendicular to the elongated cylindrical body 105, as shown in Figure 2. In this configuration, fluid pressure is continued to be applied to push the pipeline pig 100 through the larger diameter pipe. See column 7, lines 5-30 of Woehleke.

Applicant first notes that there is no mention in Woehleke of a rotational cleaning action as set forth in claim 26. Furthermore, Applicant notes that Woehleke discloses that the two sets of rib members can be radially offset to enhance cleaning. Accordingly, if the pipeline pig 100 of Woehleke was intended to rotate, there would be no need to provide the relevant members as being radially offset. As such, the design of radially offset rib members is clearly provided to ensure that the entire circumference of a pipeline is cleaned when the pig is drawn through the pipe because the pig does not rotate in the pipeline. Thus, Applicant respectfully submits Woehleke does not disclose at least a feature of a pig for use in a tubular bore having blades with a peripheral edge configured to perform a rotational cleaning action.

Applicant also notes that the front ribs 145 and rear ribs 155 do not have fluid by-pass paths through them, as set forth in claim 26. Indeed, Woehleke cannot have a fluid by-pass path because the pipeline pig 100 of Woehleke is designed to provide a seal such that the pig is used for separating different liquids and fluids through risers. See Abstract, lines 1-2 of Woehleke. Thus, any member within the Woehleke pig providing a fluid by-pass path would negate the operation of the pig and, accordingly, no fluid by-pass path is provided. Applicant additionally notes that the pipeline pig 100 of Woehleke has expandable ribs 145 and 155 made in two portions. The pipeline pig 100 also has a rigid front plate 110 which seals in a small diameter pipe and which can be effectively expanded by use of the front rib 145 so that the pig provides a seal to separate fluids in pipes of various diameters. The rear plate 120 and rear rib 155 have a similar configuration. Thus, the Woehleke pipeline pig 100 is precluded from having a fluid by-pass path because it is specifically designed to prevent fluid from passing by it.

For the reasons set forth above, Woehleke fails to disclose or suggest a pig for use in a tubular bore having blades with a peripheral edge configured to perform a rotational cleaning action and where each blade further has a least one fluid by-pass path through the blade to permit a flow of fluid to pass the pig, as set forth in claim 26. Accordingly, claim 26 is in allowable condition. Claims 29 and 32 are allowable at least for the reasons set forth above with respect to independent claim 26, from which they depend, as well as for their added features.

Applicant additionally notes that Woehleke fails to disclose or suggest a method of cleaning a tubular bore including inserting a pig into the tubular bore, whereupon a pressurized fluid applies a force to reaction surfaces of the pig to travel through the tubular in a generally axial direction, rotate about its longitudinal axis, and further urges a longitudinal axis of the pig to orbit about a substantially parallel longitudinal axis of the tubular bore, as set forth in claim 32.

For all the reasons set forth above, Applicant respectfully requests that the rejection of claims 26, 29 and 32 be withdrawn.

V. Claim Rejection 35 U.S.C. §103

A. Woehleke in view of Nose

The Office Action rejects claims 27 and 28 under 35 U.S.C. §103(a) over Woehleke in view of U.S. Patent No. 5,068,142 to Nose et al. (hereafter "Nose"). This rejection is respectfully traversed.

The Office Action asserts that Woehleke discloses all claimed elements except for a composite further including carbon or glass fiber. The Office Action then cites Nose for disclosing a fiber-reinforced polymeric resin composite material that comprises at least one of the following reinforcing fibers including carbon fibers, glass fibers and wholly aromatic polyamide (aramid) fibers.

Applicant first notes that, for the reasons set forth above, claim 26 is in allowable condition. Accordingly, claims 27 and 28 are allowable at least for the reasons set forth above with respect to independent claim 26, from which they depend, as well as for their added features.

Applicant also respectfully submits that one of ordinary skill in the art would have had no motivation to combine the carbon or glass fiber of Nose with the pipeline pig of Woehleke. Specifically, Applicant notes that the diaphragms 305 and 405 of Woehleke, operate in an umbrella-like fashion to expand and seal against the inner diameter of pipes of various dimensions. Applicant respectfully submits that inserting such fiber into the material of the diaphragms 305 and 405 of Woehleke would prevent the diaphragms 305 and 405 from operating in the requisite umbrella-like fashion and would prevent Woehleke's pipeline pig from properly sealing within a pipe. Accordingly, the proposed combination of Woehleke and Nose would detract from the operation of Woehleke. Consequently, Woehleke and Nose is an improper combination because there is no motivation to make the proposed combination, and claims 27 and 28 are allowable over the Woehleke and Nose combination. Applicant respectfully requests the rejection of claims 27 and 28 over Woehleke in view of Nose be withdrawn.

B. Woehleke and Knapp

The Office Action rejects claim 30 under 35 U.S.C. §103(a) over Woehleke in view of U.S. Patent No. 4,603,449 to Knapp (hereinafter "Knapp"). This rejection is respectfully traversed.

Specifically, the Office Action alleges the Woehleke discloses all of the claimed elements except a combination of blades having a watermelon-shaped profile. The Office Action then asserts that Knapp discloses a unitized pig body for paraffin removal that comprises discs that are in a watermelon-shaped profile so that joints (or irregularities) within a pipeline are effectively cleaned.

Applicant first notes that for the reasons set forth above, claim 26 is in allowable condition. Accordingly, claim 30 is in allowable condition for the reasons set forth above with respect to independent claim 26, from it depends, as well as for its added features.

Applicant also notes that Woehleke teaches a pig which is expandable within a pipeline and indicates that the pig desirably has a diameter which can significantly increase e.g. from 50% to 100% or greater. Applicant respectfully notes that since the Woehleke pig can vary in size, there would be no need to provide a set of multiple blades of varying fixed diameter as suggested by the Knapp reference. Accordingly, it is improper to combine Knapp with Woehleke because there is no motivation to combine, and any such combination is based on hindsight gleaned from the Applicant's application. Consequently, Woehleke and Knapp is an improper

combination and the rejection of claim 30 over Woehleke in view of Knapp should be withdrawn.

VI. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **Randall H. Cherry**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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